



— BUREAU OF —  
RECLAMATION

**FINDING OF NO SIGNIFICANT IMPACT  
(FONSI)  
LC-22-30**

**Protecting Forests for Water Supply Sustainability in Kohala, Hawai'i,  
Phases 1 and 2**

The Bureau of Reclamation (Reclamation) is providing two WaterSMART Environmental Water Resources Project grants to the State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife to protect forested and wetland habitat from high priority threats of disease and invasive species, including feral pigs, and to replant vegetation in riparian corridors.

Based on our review of the analysis provided in the Final Environmental Assessment (EA) prepared by the State of Hawai'i for the Kohala Mountain Watershed Management Project (2008-12-08-HA-FEA-Kohala-Mtn-Watershed), Reclamation finds that financial assistance will not significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), therefore an Environmental Impact Statement (EIS) is not required.

**TOSHIHIKO YOSHIDA**

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YOSHIDA

Date: 2023.03.03 13:32:52 -08'00'

Prepared: \_\_\_\_\_

NEPA Coordinator

**MICHAEL BOYLES**

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Date: 2023.03.03 14:01:52 -08'00'

Recommended: \_\_\_\_\_

Manager, Environmental Compliance Group

**SHONNA DOOMAN**

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Date: 2023.03.06 12:47:37 -08'00'

Approved: \_\_\_\_\_

Chief, Resource Management Office

## **Background**

WaterSMART Grant Numbers R22AP00611 and R22AP00612, awarded under Funding Opportunity Number R22AS00026, provides Environmental Water Resources Project funds to the State of Hawai'i, Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) for the protection of up to 2,700 acres of forested and wetland habitat within the Kohala watershed from high priority threats of disease and invasive species, including feral pigs, and to replant vegetation in riparian corridors.

The Kohala Watershed Partnership is an alliance of public and private landowners, including DLNR, which has developed a 20-year draft management plan to guide management actions over the roughly 64,000 acre area of the Kohala watershed with an overall goal of maintaining a healthy watershed and all of its related ecosystem values and functions. The primary management goals identified in the plan are: 1) protection of water resources; 2) prevention of new introductions and control of existing invasive plant species; 3) control of non-native animal populations; 4) native habitat and species protection; 5) wildfire management; and 6) management and promotion of compatible public uses. The major actions related to the management goals are fencing, feral animal removal, invasive species control, outplanting and restoration, monitoring and surveys, research, and infrastructure support and maintenance, including development of new access trails.

## **Project Description**

The specific project “Protecting Forests for Water Supply Sustainability in Kohala, Hawai‘i” has two phases. Phase one of the project includes new fence construction, feral pig removal across four existing fence units, invasive plant removal across all project areas, and revegetating with native species. Phase two of the project includes additional new fence construction and feral pig removal. Both phases will increase water supply reliability for both human use and ecological values. The projects will improve the timing and quantity of water available and improve stream and riparian conditions for the overall benefit of plant and animal species and their habitat.

## **Adoption of Existing Environmental Document**

NEPA requires review of a proposed Federal action to determine its impact on the human environment. Council on Environmental Quality (CEQ) regulations direct Federal agencies to cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements (40 CFR 1506.2). Department of Interior regulations for implementing NEPA encourage tiering of environmental documents and provide for adoption of existing environmental documents if, upon evaluation by a responsible official, it is found to comply with relevant provisions of the CEQ regulations.

Reclamation staff reviewed the Final EA for the Kohala Mountain Watershed Management Project (2008-12-08-HA-FEA-Kohala-Mtn-Watershed), prepared by the DOFAW of the DLNR for the State of Hawai'i in accordance with the Hawai'i Environmental Protection Act (HEPA) (Chapter 343 of the Hawai'i Revised Statutes) and concluded that it adequately identifies and discloses the reasonably foreseeable environmental effects of the action. We adopt the document in accordance

with regulations for implementing NEPA promulgated by the CEQ at 40 CFR 1506.3 and by the Department of the Interior at 43 CFR 46.320(a).

## **Summary of Findings**

Resource areas that were identified in the EA were described under the categories of Hydrological Environment and Water Resources; Biological Environment and Resources; Historical, Archaeological, and Cultural Environments and Resources; and Other Environments and Resources. The EA concluded that the management actions would have impacts that are both short and long-term for the environment and the surrounding community, with overall impacts having long-term benefits, as the overall goal of the management actions is to protect the existing watershed and its related services.

There will be no impacts, including cumulative impacts, to Indian Trust Assets as no Indian Trust Assets have been identified in the Project area. The proposed project will not adversely or disproportionately impact minority populations or low-income communities, as described in Executive Order 12898.

Mitigation measures were identified to reduce environmental impacts related to native animal species, native vegetation and habitats, soil and water, alien species, air pollution, climate, social considerations, economics, archaeological and historical sites, and cultural resources. A summary of these mitigation measures is attached in Appendix A. It is Reclamation's determination that the implementation of the proposed project will not result in significant impacts to any of the resources evaluated in the EA and will not significantly impact the human environment, and an EIS will not be required.

Additionally, the State of Hawai'i made the determination that the Kohala Mountain Watershed Management Project would not have a significant impact on the environment and would not require the preparation of an EIS, in accordance with Chapter 343 of the Hawai'i Revised Statutes.

## **Agency Consultation and Coordination**

### **Hawai'i State Historic Preservation Division (SHPD)**

In a letter dated September 29, 2022, Reclamation notified the Hawai'i State Historic Preservation Officer that DOFAW is authorized to initiate and conduct consultation under Section 106 of the National Historic Preservation Act for this project, as described in 36 CFR Part 800. The SHPD received the project submission on October 10, 2022. On October 14, 2022, SHPD requested additional information which was received on October 21 and December 7, 2022. The Hawai'i SHPD concurred with the determination of "no historic properties affected" pursuant to 36 CFR 800.4(d)(1), on January 18, 2023.

### **United States Fish and Wildlife Service (USFWS)**

Informal consultation with the USFWS under Section 7 of the Endangered Species Act was initiated on December 1, 2022, and concurrence was received January 13, 2023 with Reclamation's determination that the proposed action may affect, but is not likely to adversely affect Hawaiian

seabirds, the Hawaiian hoary bat, federally listed endangered plants, and their designated critical habitat. Avoidance and minimization measures were identified and are attached in Appendix A.

## **Environmental Commitments**

The State of Hawai'i is required to comply with the mitigation measures identified in the Summary of Major Impacts and Mitigation Measures as described in the Kohala Mountain Watershed Management Project EA, prepared in accordance with HEPA, and the avoidance and minimization measures identified in the USFWS concurrence memo dated January 13, 2023. The SHPD concurred with Reclamation's determination of no historic properties affected and no mitigation measures were identified. The HEPA mitigations are self-imposed by Hawai'i and are considered ameliorative design elements per 43 CFR 46.130(b). No additional environmental commitments are required by Reclamation. The Summary of Major Impacts and Mitigation Measures, USFWS concurrence memo, and SHPD concurrence letter are attached in Appendix A.

# **Appendix A**

**Summary of Major Impacts and Mitigation Measures**  
**USFWS Concurrence Memo**  
**SHPD Concurrence Letter**

## V. SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES

The management actions of fencing, feral animal removal, invasive species control, outplanting and restoration, monitoring and surveys, research, and infrastructure support and maintenance are all aimed at conserving and perpetuating Kohala's watershed and its multiple ecosystem functions of providing surface water and aquifer recharge, native habitats and species, culture, recreation, economics, and climatic benefits. The management actions outlined will have impacts that are both short and long-term for the environment and the surrounding community. Since the goal of management actions is to conserve and enhance the existing watershed and its related services for current and future generations, impacts are beneficial for the long-term.

### *Environmental Impacts*

Native animal species: Noise associated with the construction of fencing may temporarily disrupt the activities of native birds within the project area. However, based on observations during fence construction in other native forests, the impact of construction noise on native birds is expected to be minimal and temporary. The final fence alignment will be selected to avoid large trees; thus, no impact to nesting habitat is anticipated. Long-term benefits of the management actions are anticipated to include the improvement of areas to serve as native forest bird habitat, thereby offsetting any potential temporary disturbance experienced.

The use of barbed wire raises the possibility that the 'ōpe'ape'a (Hawaiian hoary bat) or seabirds could fly into the fencing and become entangled, leading to injury or possibly death. However, in order to prevent bats or seabirds getting caught on the fence, barbs will only be used along the top of the fenceline in areas bordering cattle pasture, and flagging or tape at the top may be used as visual aids for avian and bat fauna. The anticipated benefits of the project should outweigh the small chance of any negative interaction with bats or seabirds. Maintenance of the fence line will include monitoring for the presence of potential bat and seabird interactions. If it appears that bats or seabirds are being injured through contact with the fence, mitigation measures will be developed and implemented.

With regard to actions for invasive weed management, for the use of chemical controls, precautions will be taken to avoid impacts to sensitive species/habitats. Generalist herbicides will be used sparingly in areas with a high occurrence of endangered species or sensitive and rare ecotypes. Use of rodenticides and other toxic baits to control rats and mice could potentially poison non-target animals. However, careful testing of toxic baits will be conducted before and after use, and should any native species be significantly adversely affected, use will be reassessed and likely discontinued. Use of toxic baits will be done in accordance with the toxicant registration. Any release of biocontrol agents will be done in accordance with Federal and State requirements to insure no negative impacts to native species will knowingly occur.

Kohala has the potential to serve as relocation and recovery areas for species that were once found there according to fossil records. An example is the endangered Laysan duck (*Anas laysanensis*), which is now only found in the Northwestern Hawaiian Islands but was once

widespread in Kohala. For the Blackburn's Sphinx moth, the USFWS has identified areas in Kohala as potential recovery management units for the species. By addressing many of the threats such as feral ungulates, rats, and invasive aquatic species, that would make such recovery impossible, proposed management actions would create secure native habitats needed for the survival of rare or threatened and endangered species. As such, overall impacts to native animal species are anticipated to be positive.

For any biological resources (e.g. rare, threatened, endangered species/habitats) that may be discovered during any of the proposed management actions, all work will cease and the appropriate agencies and organizations contacted for appropriate consultation and procedures.

Native vegetation and habitats: Construction of fencing, boardwalk, or new trails should result in minimal disturbance to vegetation within a limited construction corridor as a result of the clearing needed to remove potential hazards to crew and to facilitate construction. Common plant species would be pruned or removed along the corridor only when necessary. Removal of native plants greater than six inches in diameter will be avoided. If areas of sensitive botanical resources, large trees, or streams are identified, fence alignments would be adjusted to avoid or mitigate impacts to such areas. Based on fencing as well as boardwalk initiatives in similar native forested areas on Maui, O'ahu, Moloka'i, and other parts of Hawai'i island, impact to vegetation would be short-term with regrowth of cleared vegetation for fence construction occurring subsequent to the completion of the fence. However, ongoing inspection and maintenance (particularly of fences) would require that immediate corridors be kept cleared of vegetation to maintain integrity of structure(s). Particularly after storms or heavy rains, feral ungulate barriers that may have been used in stream areas (e.g. breakaway panels, metal grates, durable fabric curtains, etc.) will be checked to insure their integrity, and also cleared of accumulated debris to insure stream flow continues and is not blocked. Where possible, the fence, boardwalk, and trails will be aligned so that it passes through open or sparsely vegetated areas with removal of common native species done only when necessary.

Overall, by addressing threats such as feral ungulates and invasive species, the native habitat and survival of rare or threatened and endangered species will be enhanced by proposed management actions. In particular, bird, snail, aquatic, and plant species will benefit greatly by keeping intact or restoring native habitats for species survival. For sensitive habitats such as those of the Pu'u O 'Umi Natural Area Reserve (NAR), impacts of management actions would serve to conserve and enhance these areas. For example, in biodiversity unit I, this 20 acre area will protect one of the last remaining lowland wet forest stands in the NAR. In biodiversity unit L, proposed management actions will provide continued habitat for all of the five *Clermontia* species known from Kohala Mountain. Biodiversity unit F is also the only place on Hawai'i island that *Trematolobelia macrostachys* (koli'i) is known to inhabit.

Soil and Water: Much of the water of the Kohala watershed is captured and delivered for domestic and agricultural uses in Waimea, H m kua, and North Kohala. The forests in the watershed also acts as a filter to clean and to cycle organic matter and nutrients through the

vegetation, soils, and streams, and helps deliver a consistent and dependable source of artesian and surface water, as well as mitigating flood damage downstream. In addition to communities and households, Kahu , Ponoholo, and Parker ranches, as well as many smaller ranchers and farmers, rely heavily on the water resources provided by Kohala for their operations. The farmers of Waipi‘o valley depend upon reliable, clean, abundant water in streams to cultivate their kalo (taro). In addition, there is a growing demand for domestic water within all of the municipalities surrounding Kohala Mountain. Society’s demand for water is expected to grow as the North and South Kohala and H m kua districts continue to expand over the coming decades. The impact of proposed management actions would conserve and enhance the water resources available for existing communities and commercial industries as well as help to ensure that future needs could be met as communities grow. Management actions will also allow managers to assess water resources, overall health of the watershed, and effectiveness of management actions.

The conservation and preservation of the forests of Kohala will also help to mitigate soil erosion and sediment run-off into coastal areas. The forest acts as a soil anchor when plants such as ferns and forbs hold surface organic matter that is used as nutrients, and deep-rooted woody plants hold deeper layers of soil and bedrock. The multi-layered canopy of the Kohala forests also shelter the ground surface from the frequent heavy rains that might otherwise wash away its organic matter and mineral soils, thereby protecting nearshore waters from sediments transported by streams. The existence of the forest may also assist with lessening the impact of flooding. While flooding is a natural process that has occurred throughout time, it has been exacerbated in modern history by human habitation and development. Floods can close roads, damage major water supply lines, destroy property, and disrupt businesses. By providing dense ground cover, forests can serve to slow down water as it flows from the mountains thereby helping to decrease the impact of floods.

In many cases, existing trails are not maintained and have resulted in disturbance to the soil and ground cover. The installation of board walks and better footing will decrease the impact of trail use through sensitive habitats. Fence and boardwalk construction as well as new trail development may contribute to erosion or runoff, however, these impacts are anticipated to be short-term and no changes in normal rainwater runoff or percolation expected. To minimize the possibility of this occurrence, the Division of Forestry and Wildlife’s Best Management Practices (BMPs) for Maintaining Water Quality in Hawai‘i (1996) will be incorporated during the project. Specific BMPs to be incorporated include: locating corridors to fit topography and minimize alterations to the natural features; provision of dips and water bars to minimize erosion; avoidance of the diversion of water from natural drainages; keeping grades at less than 10%, except where unavoidable; and other measures as needed. While these practices should mitigate any potential erosion or runoff caused by construction, the long-term benefits of the project, including decreased ungulate-related erosion, should counteract any potential harm. Regarding weed control and management, herbicides approved for use near water bodies will be used and application methods and equipment that minimize impacts will be selected. Pesticide usage will be in full compliance with State and Federal regulations with staff trained on its safe preparation and application thereby minimizing impact of potential soil contamination. For some mechanical



techniques, ground disturbance may occur. In order to prevent replacement of one alien species by another after an eradication effort, sequenced replacement with species of choice in the removed gap areas will be done or staggered weed removal will be used. This method requires follow-up maintenance.

Alien species: The disturbance to the ground surface and vegetation involved with building a fence may create conditions suitable for the establishment of alien plants and animals. Construction equipment, materials, and personnel may provide opportunities for the accidental introduction of nonnative plants and animals (either new species or existing species in new areas). The following practices will be implemented to minimize the introduction of alien plants and animals and to reduce the possibility of establishment: First, boots, equipment and materials will be inspected for such items such as seeds, eggs, larvae, etc., prior to delivery and/or entry into the project area, and cleaned as necessary; any vehicles used during construction will be inspected and cleaned as needed, following appropriate alien species prevention protocol; and all workers will be instructed on specific procedures to prevent the spread or introduction of alien plants and animals in the project area. In addition, follow-up monitoring for alien species along the fence and boardwalk post-construction and other projects will also occur.

The use of biological controls to control alien invasive species in the Kohala Mountain watershed will only be conducted under strict accordance with state and federal protocols for biological control agents, including extensive research in a laboratory setting to determine effects to non-target native and agricultural species, as well as rigorous feeding trials in quarantine and controlled field settings in both the target pest's home range and in Hawaii. In addition to this research, a separate environmental assessment will precede the release of any biological control agent into natural areas in Hawaii. Sites of release of biological control agents will be rigorously monitored for adverse affects to native forests as well as agricultural crops.

Air pollution: Use of helicopters for transportation of materials and staff may affect air quality. However, given the short duration of and temporary use of such flights, it is anticipated that this will not contribute significantly to air pollution.

Climate: The forests of the Kohala Mountain watershed support an abundance of dense and multi-storied canopy of woody plants that serve to store carbon. Sphagnum and peat environments that are common within forest and bog communities of the watershed represent a relatively high proportion of world carbon stores. Management actions to conserve such areas may provide communities and commercial industries with carbon credits for future consideration, and may mitigate the effects of climate change.

### *Social Impacts*

Periodic noise from helicopter flights, power tools, and other activity associated with fence and boardwalk building as well as flying in staff for maintenance, surveys, and research will be unavoidable during implementation of management actions. However, given the remoteness of this area and the fact that it is not immediately adjacent to any communities, it is anticipated that

such noise levels would be negligible. In addition, all activities will be done during daylight hours and for short durations, thereby further mitigating potential noise disturbance.

By keeping forests and species intact and thriving, existing uses of the watershed for recreation (e.g. hiking, hunting, camping) and education will continue if proposed management actions are implemented. Management actions aim to maintain, and in some cases either improve or increase such social uses of the Watershed Management Area. For example, by maintaining current access trails and creating new access trails for hunting and hiking, improved facilities, and signage, potential negative impacts such as people getting lost, accidental introduction of alien species, soil erosion, loss of subsistence hunting areas, or disturbance to sensitive areas will be minimized and new opportunities created for more appropriate use areas. Some fences may also have one-way doors to allow feral pigs to move out of management units into other areas for hunting purposes. In addition, pooling or congregating of animals along fences will be minimized because staff will be regularly monitoring fences and implement appropriate measures when needed. In addition, cross-overs or pedestrian gates will also be installed at trails and access points along the fence to allow for people to move across the fence line. This will facilitate access for hikers, hunters, gatherers, researchers, and others who are using the area with approved permits and landowner permission. Finally, development of new access trails will mitigate for the decrease in hunting acreage by making other hunting areas more accessible.

The addition of environmental education and related activities such as hikes and service volunteer trips will also add to the positive social impacts by providing opportunities to educate adults and children about the unique ecosystems and biodiversity of Kohala Mountain. The Watershed Management Area also offers numerous potential sites for scientific research and for field trips to reinforce classroom curricula. The boardwalk, improved trail management, and signage will enhance such experiences. As a result, overall social impacts of this project are expected to be positive.

#### *Economic Impacts*

Many local families use feral pig meat as an important source of food. The decrease in public hunting acreage from 32,000 acres to 26,000 acres is not expected to impact this food resource, because the population of feral pigs in accessible and well-used hunting areas is not limited by the current rate of hunting. Additionally, the public hunting grounds that are planned for fencing and animal control are some of the most remote and least visited areas on Kohala Mountain.

The proposed action involves the expenditures of funds necessary to construct the fencing and boardwalk, including the purchase of materials, the hiring or contracting of crews, and the purchase or rental of equipment including helicopters, removal of animals, and to restore the project area using weed control, outplanting, and fire management. Research related to management actions will also be conducted. Already, estimated total cost for one proposed conservation project related to fencing and feral ungulate removal is close to \$300,000. The Kohala Watershed Partnership is already partnering with other non-profits, including The Kohala Center as a fiscal agent, to carry out this as well as future management projects.

In addition, the economic characteristics of the management actions have the potential to affect any commercial activities that rely on the collection and distribution of water to conduct business in the surrounding towns (e.g. Waimea, Kapa‘au, Honoka‘a). Examples include hotels, farms, ranches, restaurants, County Department of Water Supply, and others. As such, the protection of these areas via the proposed management actions will be critical to ensure these economic activities continue. Tourists also enjoy these natural areas, and the continued health of the watershed could have a positive economic impact on the tourism industry as well as related businesses such as hotels and restaurants.

As such, economic impacts are neutral or positive and will result from the release of project funds into the State economy through the purchase of goods and services from local vendors, as well as employment for fence and boardwalk building as well as conservation workers and researchers and students from local universities and colleges.

#### *Impacts to Archaeological and Historical Sites or Cultural Resources*

In general, the proposed management actions pose no negative impacts to either archaeological or historical resources in the project area as no management actions are being proposed for work at known sites. Eradication or reduction of feral ungulate populations will benefit archaeological sites as these animals have been known to trample or topple artifacts.

Cultural practices in this area (such as gathering), may be impacted by making certain areas inaccessible during periods of fence and boardwalk construction. Efforts will be made to accommodate the continuation of cultural practices during fence construction so as to provide the least disruption.

As stated under Economic Impacts above, the removal of 6,600 acres of remote hunting lands from the public hunting acreage is not expected to affect the availability of pig hunting opportunities, nor the availability of wild meat for local families, nor ceremonial pua‘a for Native Hawaiian ritual purposes. At current hunting rates and barring major ecological changes, the supply of feral pigs from public hunting areas is expected to provide a sustainable, social and economic resource well into the future.

Overall, the proposed action is expected to have a positive impact on native Hawaiian traditional and cultural practices as protection of the forest and restoration of its native habitats can benefit practices such as traditional gathering by insuring that plants used in such collecting retain robust, abundant populations. In addition, overall conservation of native habitats and species will also aid in preserving the rich native Hawaiian history and spiritual connection to the forest, as places linked with oli and stories are preserved. Fencing will incorporate pedestrian gates as well as step-overs at appropriate locations so access by people is not blocked (only animal movement), and maintenance of access trails will be implemented. Therefore, it is anticipated that proposed management actions will have long-term benefits for the perpetuation of native traditions and cultural practices.

While archaeological, historical, or cultural sites are not anticipated to be affected by the proposed actions, should evidence of any such sites be encountered during implementation of management actions (e.g. fence and boardwalk construction, etc.), activities would cease immediately and the appropriate parties would be consulted to determine procedures.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Pacific Islands Fish and Wildlife Office  
300 Ala Moana Boulevard, Room 3-122  
Honolulu, Hawai'i 96850

In Reply Refer To:  
2023-0026823-S7-001

January 13, 2023

## Memorandum

To: Shonna Dooman, Chief, Resource Management Office, Bureau of Reclamation

From: Island Team Manager, Pacific Islands Fish and Wildlife Office

Subject: Informal Consultation for 2023-0026823 Two WaterSMART Environmental Water Resources Projects in the Kohala Watershed, DOI Bureau of Reclamation, Kohala, Hawai'i

The U.S. Fish and Wildlife Service (Service) received the U.S. Department of the Interior Bureau of Reclamation request for informal consultation for the above project in Kohala, Hawai'i, on December 1, 2022, requesting our concurrence with the determination that the two WaterSMART Environmental Water Resources Projects may affect, but are not likely to adversely affect the following species:

- Hawaiian seabirds, including the 'ua'u or Hawaiian petrel (*Pterodroma sandwichensis*), and the 'a'o or Newell's shearwater (*Puffinus auricularis newelli*),
- 'Ope'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*),
- Listed plants, including *Gardenia remyi* nānū), *Pritchardia lanigera* (loulu), *Cyanea tritomantha* ('akū), *Clermontia drepanomorpha* ('ōhā wai), *Stenogyne cranwelliae*, *Phyllostegia warshaueri*, *Achyranthes mutica*, *Schiedea diffusa* subsp. *macraei*, and
- Designated critical habitat for *Achyranthes mutica*, *Clermontia drepanomorpha*, *Nothoestrum breviflorum*, and *Phyllostegia warshaueri*.

On July 5, 2022, the U.S. District Court of the Northern District Court of California vacated the 2019 regulations implementing section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*) as amended (ESA). On September 21, 2022, the Ninth Circuit Court of Appeals granted a request to stay the U.S. District Court of Northern California's July 5, 2022, order that vacated the 2019 ESA regulations. As a result, the 2019 regulations are again in effect, and the Service has relied upon the 2019 regulations in issuing our written concurrence on the action agency's "may affect, not likely to adversely affect" determination. However, because the outcome of the legal challenges to the 2019 ESA regulations is still unknown, we considered whether our substantive analyses and conclusions would have been different if the pre-2019

## PACIFIC REGION 1

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IDAHO, OREGON\*, WASHINGTON,  
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regulations were applied in this informal consultation. Our analysis included the prior definition of “effects of the action.” We considered all the “direct and indirect effects” and the “interrelated and interdependent activities” when determining the “effects of the action.” We then considered whether any “effects of the action” that overlap with applicable ranges of listed species would be wholly beneficial, insignificant, or discountable to the species. As a result, we determined the substantive analysis and conclusions would have been the same, irrespective of which regulations applied.

This letter has been prepared under the authority of, and in accordance with, provisions of the ESA.

### **Project Description**

The two proposed WaterSMART Environmental Water Resources Projects in the Kohala Watershed were awarded to the State of Hawai‘i Department of Land and Natural Resources Division of Forestry and Wildlife (Figure 1). The specific project is called Protecting Forests for Water Supply Sustainability in Kohala, Hawai‘i. There are two phases of the project. Phase one of the project includes fence construction, feral pig removal across four fence units at Wai‘ilikahi, Waipo‘o, and Pu‘u Pili, invasive plant removal across all project areas, and planting native species in the Koai‘a corridor. Phase two of the project includes Kawainui fence construction and feral pig removal from Kawainui fence unit. Both projects will increase water supply reliability for both human use and ecological values. The projects will improve the timing and quantity of water available and improve stream and riparian conditions for the benefit of plant and animal species and their habitat. The project is anticipated to be year-round with construction of the 800-acre Kawainui fence to start as soon as possible with project completion in two years by October 2024. Work will be conducted during daylight hours, no artificial lighting will be used, and no lights will be used at night.

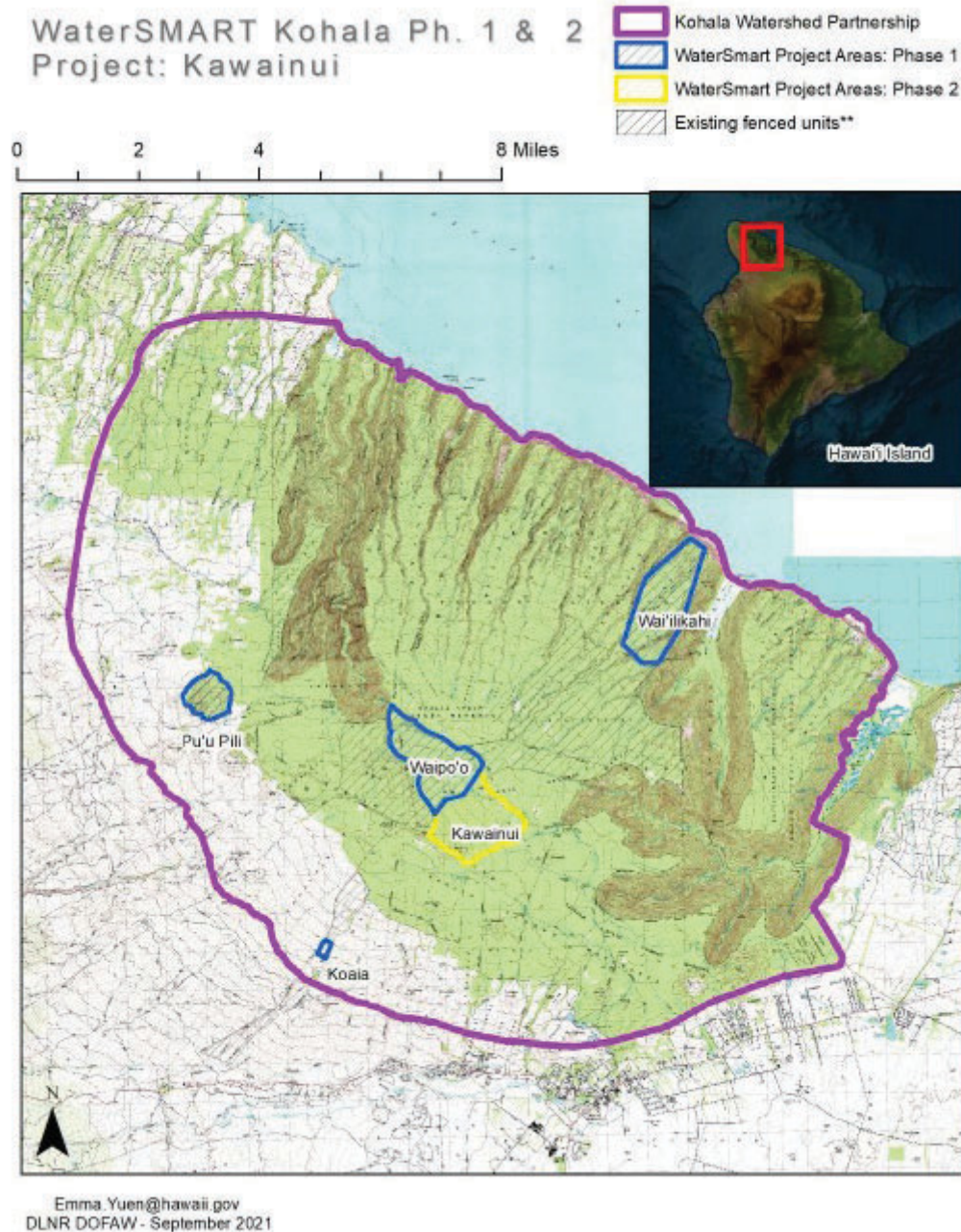


Figure 1. Overview of project area.

**Effects to Listed Species**

Hawaiian seabirds

Hawaiian seabirds may traverse the project area at night during the breeding, nesting, and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other

structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

The following measures will be implemented to avoid adverse effects to Hawaiian seabirds:

- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.
- Several strands of flagging or high-visibility tape will be added to sections of the fence that are in open areas where the fence is taller than the nearby vegetation, particularly on ridgelines, making the fence more visible to seabirds.

Based on the proposed project design and implementation of Service-recommended avoidance and minimization measures, Hawaiian seabirds traversing the area at night are unlikely to be injured, killed, or measurably disrupted from their normal behaviors. Therefore, effects to Hawaiian seabirds are insignificant.

#### Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands. Young are left unattended in trees and shrubs when they forage. If trees or shrubs, 15 ft or taller are cleared during the pupping season (between June 1 and September 15) there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 ft to higher than 500 ft above the ground and can entangle in barbed wire used for fencing. To avoid and minimize adverse effects to the endangered Hawaiian hoary bat the following measures are incorporated into the project:

- No trees or woody plants greater than 15-ft tall will be cut.
- No barbed wire fencing will be installed above ground level.

The proposed project will not disturb, remove, or trim woody plants 15-ft tall or greater during the bat-pupping season (June 1 through September 15) and barbed wire fencing will not be used above ground level. Based on the proposed project design and implementation of Service-recommended avoidance and minimization measures, Hawaiian hoary bats are extremely unlikely to be measurably disrupted from their normal behaviors. Injury or mortality of Hawaiian hoary bats would not occur. Therefore, effects to the Hawaiian hoary bat are insignificant.

#### Endangered Plants

Project activities may affect listed plant species by causing physical damage to plant parts (i.e., roots, stems, flowers, fruits, seeds, etc.) as well as impacts to other life-requisite features of their habitat which may result in reduction of germination, growth and/or reproduction. Cutting and removing vegetation surrounding listed plants can alter microsite conditions (e.g., light, moisture, temperature), damage or destroy the listed plants, increase the risk of invasion by nonnative plants, and cause higher incidence or intensity of fire. Activities such as grazing, using construction equipment and vehicles, and increased human traffic (i.e., trails, visitation, monitoring), can cause ground disturbance, erosion, and/or soil compaction which decreases



absorption of water and nutrients and damages the plants' root systems. This may result in reduced growth and/or mortality of listed plants. Soil disturbance or removal has the potential to negatively impact the soil seed bank of listed plant species if such species are present or historically occurred in the project area.

The Kohala Watershed lies within the ranges of eight endangered plants. State of Hawai'i Department of Land and Natural Resources staff performed botanical surveys in the fence construction areas during the planning phase. Staff did not locate any rare or federally listed plant species along the proposed fence corridor.

The following avoidance and minimization measures will be implemented to protect these endangered plants:

- The boundary of the area occupied by listed plants will be marked with flagging by the surveyor.
- Temporary fencing or other barriers will be placed as far from affected endangered plants as practicable to reduce the impacts to endangered plants.
- All workers will be informed regarding the presence of endangered plants.
- Biosecurity measures will be in place to prevent spread of invasive plant and disease. All staff will be required to follow biosecurity sanitation protocols that require dedicated gear to prevent the spread of invasive plants and pests. All field crews will follow sanitation and decontamination protocols to avoid the spread of rapid 'ōhi'a death, including use of rubbing alcohol on field gear and shoes.
- We recommend adherence to buffer distances for the activities in the **Table below**.

Table 1. Recommended buffer distances to minimize and avoid potential adverse impacts to listed plants from activities listed below.

Action		Buffer Distance (feet (meters)) - Keep Project Activity This Far Away from Listed Plant	
		Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Walking, hiking, surveys		3 ft (1 m)	3 ft (1 m)
Cutting and Removing Vegetation By Hand or Hand Tools (e.g., weeding)		3 ft (1 m)	3 ft (1 m)
Mechanical Removal of Individual Plants or Woody Vegetation (e.g., chainsaw, weed eater)		3 ft up to height of removed vegetation (whichever greater)	3 ft up to height of removed vegetation (whichever greater)
Removal of Vegetation with Heavy Equipment (e.g., bulldozer, tractor, "bush hog")		2x width equipment + height of vegetation	820 ft (250 m)
Use of Approved Herbicides (following label)	Ground-based Spray Application; hand application (no wand applicator; spot treatment)	10 ft (3 m)	Crown diameter
	Ground-based Spray Application; manual pump with wand, backpack	50 ft (15 m)	Crown diameter
	Ground-based Spray Application; vehicle-mounted tank sprayer	50 ft (15 m)	Crown diameter
	Aerial Spray (ball applicator)	250 ft (76 m)	250 ft (76 m)
	Aerial Application – herbicide ballistic technology (individual plant treatment)	100 ft (30 m)	Crown diameter
	Aerial Spray (boom)	Further consultation required	Further consultation required
Ground/Soil Disturbance/Outplanting/Fencing (Hand tools, e.g. shovel, `õ`õ; Small mechanized tools, e.g., auger)		20 ft (6 m)	2x crown diameter
Ground/Soil Disturbance (Heavy Equipment)		328 ft (100 m)	820 ft (250 m)
Surface Hardening/Soil compaction	Trails (e.g., human, ungulates)	20 ft (6 m)	2x crown diameter
	Roads/Utility Corridors, Buildings/Structures	328 ft (100 m)	820 ft (250 m)

**Definitions** (Wagner *et al.* 1999). **Crown:** The leafy top of a tree. **Herb:** A plant, either annual, biennial, or perennial, with the non-woody stems dying back to the ground at the end of the growing season. **Shrub:** A perennial woody plant with usually several to numerous primary stems arising from or relatively near the ground. **Tree:** A woody perennial that usually has a single trunk.

Based on the project description and the inclusion of the above Service-recommended avoidance and minimization measures, no federally listed plants would be measurably affected by project activities. Therefore, effects to federally listed plants are insignificant or discountable.

Critical habitat for *Achyranthes mutica*, *Clermontia drepanomorpha*, *Nothocestrum breviflorum*, and *Phyllostegia warshaueri*

The following avoidance and minimization measures will be implemented to protect critical habitat units Hawai'i 9—*Achyranthes mutica*—e, Hawai'i 8—*Clermontia drepanomorpha*—a, Hawai'i 5—*Nothocestrum breviflorum*—a, and Hawai'i 8—*Phyllostegia warshaueri*—b for endangered plants:

- Areas will be surveyed by a qualified botanist prior to any clearing.
- Any existing native plants will be left in place to avoid ground disturbance.
- Herbaceous weed control will be conducted by hand with the use of hand tools and/or weed machines in vicinity of native plants.
- Appropriate buffers identified in the previous Table will be applied around any endangered plants encountered.

This project intends to reestablish native vegetation formerly found in the area and is unlikely to adversely affect endangered plants critical habitat.

Summary

Based on the project description provided, along with the proposed avoidance and minimization measures that will be implemented, effects from the actions are insignificant or discountable. We concur with your determination that the proposed action may affect, but is not likely to adversely affect Hawaiian seabirds, the Hawaiian hoary bat, federally listed endangered plants, and their designated critical habitat. This concludes section 7 consultation on the two WaterSMART Environmental Water Resources Projects in the Kohala Watershed with the Bureau of Reclamation. Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service:

- If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
- If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or,
- If a new species is listed or critical habitat designated that may be affected by the identified actions.

Thank you for participating with us in the protection of our endangered species. If you have any questions, please contact Chelsie Javar-Salas at [chelsie\\_javar@fws.gov](mailto:chelsie_javar@fws.gov) or by telephone at 808-792-9400. When referring to this project, please include this reference number: 2022-0026823-S7-001.

Sincerely,

LINDSY  
ASMAN

Digitally signed by  
LINDSY ASMAN  
Date: 2023.01.13  
17:21:53 -10'00'

Lindsay Asman  
Island Team Manager  
Maui Nui and Hawai'i Island

cc: Andrew Trouette, Bureau of Reclamation

JOSH GREEN, M.D.  
GOVERNOR | KE KIA'AINA

SYLVIA LUKE  
LIEUTENANT GOVERNOR | KA HOPE KIA'AINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

January 18, 2023

Emma Yuen, Native Ecosystems Program Manager  
Division of Forestry and Wildlife  
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1151 Punchbowl Street  
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Email: [Emma.Yuen@hawaii.gov](mailto:Emma.Yuen@hawaii.gov)

IN REPLY REFER TO:  
Project No. 2022PR01256  
Doc. No. 2310SN05  
Archaeology

Dear Ms. Yuen:

**SUBJECT: National Historic Preservation Act (NHPA) Section 106 Review – Request for Concurrence with Effect Determination Pu'u O Umi Natural Area Reserve – Fencing Project Pu'ukapu Ahupua'a, Kohala District, Island of Hawai'i TMK: (3) 6-3-001:001 por., 002 por., 004 por., and 005 por.**

This letter provides the State Historic Preservation Division's (SHPD's) review of a request for concurrence with a project effect determination for the Department of Land and Natural Resources Division of Forestry and Wildlife's (DOFAW's) Pu'u o Umi Natural Area Reserve Fence project. In a letter dated September 29, 2022, the United States Department of the Interior Bureau of Reclamation (Bureau of Reclamation) notified the State Historic Preservation Officer (SHPO) that DOFAW is authorized to initiate and conduct NHPA Section 106 consultations for this project, as described in 36 CFR Part 800. The SHPD received the project submission on October 10, 2022. On October 14, 2022, SHPD requested additional information which our office received on October 21 and December 7, 2022.

The submittal materials indicate the proposed DOFAW project has received funding under Reclamation's FY22 WaterSMART Environmental Water Resources Projects program (R22AS00026). Thus, the project has been determined to be a federal undertaking as defined in 36 CFR 800.16(y). The Bureau of Reclamation will remain responsibility for all findings and determinations during the Section 106 process. This DOFAW project is also subject to review in accordance with Hawaii Revised Statutes (HRS) §6E-8. SHPD concurred with DOFAW's HRS §6E-8 project effect determination of "No historic properties affected" in a letter dated April 27, 2020 (Log No. 2020.00211, Doc. No. 2004GC22).

The DOFAW project will facilitate the construction of additional watershed protection fencing, along with fence maintenance, tree planting, and ungulate removal within approximately 1,533.43 acres of the 10,375-acre State-owned Pu'u O Umi Forest Reserve. The HRS 6E project area and the federal area of potential effects (APE) are synonymous.

No historic properties were identified within the project area/APE. The DOFAW, on behalf of the Reclamation, has determined that the proposed project will result in *no historic properties affected*. **The SHPO concurs with *no historic properties affected* pursuant to 36 CFR 800.4(d)(1).**

The Bureau of Reclamation and DOFAW are the offices of record for this undertaking. Please maintain a copy of this letter with your environmental review record for this undertaking.

Emma Yuen  
January 18, 2023  
Page 2

Please contact Sean Naleimaile at (808) 933-7651 or at [sean.p.naleimaile@hawaii.gov](mailto:sean.p.naleimaile@hawaii.gov) for any questions or concerns regarding this letter.

Aloha,

*Alan Downer*

Alan S. Downer, PhD  
Administrator, State Historic Preservation Division  
Deputy State Historic Preservation Officer

cc. Justin Demaio, [jdemaio@usbr.gov](mailto:jdemaio@usbr.gov)  
Cara Oba, [cara.m.oba@hawaii.gov](mailto:cara.m.oba@hawaii.gov)